



Small Hydropower Pilot Project in Southern Kyrgyzstan

An Overview of USAID Activities in Central Asia

Development Challenge

All forms of production, including agriculture, rely on energy. In the Kyrgyz Republic, economic growth and social development are hindered by inadequate efficient supplies of quality energy. In the south, the country's most populous and ethnically diverse region, there is great potential for economic growth based on agriculture and agro-processing. Yet, electric service is unreliable, and frequent power cuts make it almost impossible to operate any kind of business that requires a stable supply of electricity. To compound the problem, the country's economic situation does not permit expansion of the central energy system to provide a reliable source of electricity.

The village of Jangy-Naukat, located in southern Kyrgyzstan's Osh province, is without power for 12 hours a day. For many years, the 22,305 residents of Jangy-Naukat, the majority of whom are ethnic Uzbeks, asked Kyrgyzstan's national energy company to build a small hydropower plant on the Naiman Canal. Although a feasibility study revealed hydropower potential of the canal, the energy company declined to build the facility, citing a lack of funds.

USAID's Response

USAID's small hydropower pilot project in Jangy-Naukat demonstrates how small distributed generation facilities can assure a reliable supply of electricity, which sustains local economic growth and social development. The hydropower plant's expected output is: 600 kW of installed capacity, 380 kW of minimal available capacity in winter, and 4,000,000 kWh of average annual energy production.

The pilot project is designed to encourage rural communities to consider public-private partnerships to develop reliable, low-cost, environmentally-friendly sources of electricity. The overall goal is to increase public understanding of the market approach for energy services and to encourage the public to participate in energy sector decisions that affect them.

USAID encouraged broad community involvement to establish a private business responsible for operating the plant on a commercial basis. A public awareness campaign was initiated to promote collaboration and involve the local community leaders, representatives and residents. Presentations provided information on the proposed project and encouraged local contributions, including construction materials, labor and cash. Negotiations with local businesses and investors were also conducted to cover part of the local contribution.

As a result of the outreach effort, the residents of Jangy-Naukat co-financed the establishment of a joint stock company (JSC "Naiman GES") to own and operate the small hydropower plant. The founders' initial contributions total \$125,000. For a poor country like the Kyrgyz Republic, this substantial financial contribution bears witness to the contributors' belief in the benefits of this project.

In September 2002, USAID and Naiman GES signed a cooperative agreement to regulate their relationship and define the responsibilities of each party. It was agreed that the full

cost of construction work would be paid by Naiman GES, and all necessary equipment and technical assistance would be provided by USAID. Upon completion of construction work, the equipment will be transferred to Naiman GES.

A USAID site engineer will supervise the construction of the small hydropower plant for the duration of the construction and installation work. USAID also helped Naiman GES evaluate the technical and capacity capabilities of the construction company and helped negotiate the contract to ensure that all work will be performed in accordance with established standards and quality specifications. In addition, USAID is providing its partners with training on project identification and feasibility studies and on management, operation and maintenance of small hydropower plants, as well as building the capacity of local companies to manufacture equipment for the plant.

Benefits

Local officials estimate that the plant will preserve up to 25 existing jobs in the local engineering and manufacturing sector and lead to the creation of at least 20 new jobs. The management, operation and maintenance of the hydropower plant in Jangy-Naukat will require a permanent staff of up to 12 people. Once local companies build up their capacity to manufacture and repair components for small hydropower plants, additional jobs will be created and the cost of building small hydropower plants in other locations will be reduced by up to 60%.

Entrepreneurs in Jangy-Naukat plan to develop small-scale industries (e.g., processing of fruit, potatoes and pistachios and production of bricks). Up to 60 new employment opportunities will be created for women in knitting, sewing workshops, and agricultural processing. The new jobs created by these industries will help ease social tension due to unemployment (according to local officials, the unemployment rate is 55-65%) and contribute to economic growth.

An additional 500 hectares of land will be irrigated by pumps using electricity supplied by the plant. Land lots of 0.25 hectare each will be given to 1,000 needy families (the average family size is six people). The minimum expected average additional income per family involved in new agriculture is approximately \$180 per season.

Several public institutions in Jangy-Naukat, including one hospital with 75 beds and six schools with approximately 5,000 students, will also receive a reliable electricity supply.

Finally, the lessons learned from this USAID project will be widely circulated throughout the region, creating a replicable model for others to follow.

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